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# Security Council

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## Letter dated 7 December 2001 from the Secretary-General addressed to the President of the Security Council

I have the honour to transmit herewith, for your attention, the text of a letter dated 7 December 2001 from the Director General of the International Atomic Energy Agency (see annex).

(*Signed*) Kofi A. **Annan**

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# Annex

[Original: English]

## Letter dated 7 December 2001 from the Director General of the International Atomic Energy Agency to the Secretary-General

I would be grateful if you could arrange to transmit the enclosed letter and its attachment to the President of the Security Council.

(*Signed*) Mohamed **ElBaradei**

## Enclosure

### Letter dated 7 December 2001 from the Director General of the International Atomic Energy Agency to the President of the Security Council

I refer to Security Council resolution 1373 (2001) of 28 September 2001, in which the Council noted with concern the close connection between international terrorism and illegal movement of nuclear materials and, in that regard, emphasized the need to enhance coordination of efforts at the national, subregional, regional and international levels in order to strengthen a global response to this serious challenge and threat to international security. The Council also called upon all States, inter alia, to find ways of intensifying and accelerating the exchange of operational information, especially regarding the threat posed by the possession of weapons of mass destruction by terrorist groups, and to become Parties as soon as possible to the relevant international conventions and protocols relating to terrorism.

In that context, I wish to inform you that the General Conference of the International Atomic Energy Agency (IAEA), in resolution GC(45)/RES/14 B of 21 September 2001, requested me to review thoroughly the activities and programmes of the Agency with a view to strengthening the Agency work relevant to preventing acts of terrorism involving nuclear material and other radioactive materials. In response to that request, I submitted a report on protection against nuclear terrorism to the IAEA Board of Governors, summarizing Agency work currently in progress in areas relevant to the prevention and mitigation of the consequences of terrorist acts and outlining proposals for enhanced and additional activities. Excerpts from that report are contained in the attachment to the present letter.

The Board acknowledged that all member States had an obligation to support the Agency's response to this global problem, and directed me to proceed urgently with approved activities, as and when resources become available. The Agency has already received some extrabudgetary contributions for that purpose, and hopes that the necessary additional pledges will be made in the near future. Those funds will be used, inter alia, for the immediate implementation of priority activities, including expert missions to assess States' physical security arrangements and recommend upgrades, and the provision of nuclear security-related training.

The Board of Governors also requested me to continue, in consultation with member States, the review of our proposed response to the threat of nuclear terrorism, and to submit the outcome for the Board's consideration at its March 2002 session.

I would appreciate your bringing the present letter to the attention of the members of the Security Council.

(*Signed*) Mohamed **ElBaradei**

**Attachment**

# PROTECTION AGAINST NUCLEAR TERRORISM

***Excerpts from a Report by the Director General to the Board of Governors of the International Atomic Energy Agency***

1. In the immediate aftermath of the terrorist attacks on 11 September, the General Conference of the IAEA adopted a resolution requesting "the Director General to review thoroughly the activities and programmes of the Agency with a view to strengthening the Agency work relevant to preventing acts of terrorism involving nuclear materials and other radioactive materials". The present report is the initial response to that request.

2. This report summarizes Agency work currently in progress in areas relevant to the prevention and mitigation of the consequences of terrorist acts and outlines proposals for a number of enhanced and additional activities that the Agency believes necessary. It considers the following threats from acts of nuclear terrorism by a subnational group:

- acquisition of a nuclear weapon;
- acquisition of nuclear material to construct a nuclear weapon or to cause a radiological hazard;
- acquisition of other radioactive materials to cause a radiological hazard;
- violent acts against nuclear facilities to cause a radiological hazard.

## OVERALL AGENCY RESPONSE

3. The responsibility to counter potential acts of nuclear terrorism rests with individual States, which normally adopt a combination of defence, physical security and functional safety measures. This combination varies from State to State. In addition to national measures there is, however, an indispensable need for a number of international measures to ensure that nuclear security is effective worldwide. This is important because security is only as good as its weakest link. Areas where the Agency can contribute include the establishment and application of international norms and standards, the provision of international forums for information exchange, the identification of deficiencies, the proposal of strategies to resolve identified deficiencies and the co-ordination of bilateral and international support.

4. Prior to the spate of nuclear smuggling incidents in the mid-1990s, Agency activities related to the security of nuclear and other radioactive material and facilities were largely limited to the conclusion of the Convention on the Physical Protection of Nuclear Material and the development of recommendations entitled *The Physical Protection of Nuclear Material and Nuclear Facilities*.

5. Since 1995, some programme activities for the protection of nuclear materials from theft and sabotage and for assisting States in combating illicit trafficking of nuclear material and other radioactive materials have been included in both the Agency's regular and technical co-operation programmes.[1] However, there has been limited financial support from Member States. A number of activities described in this report have been approved by the Board of Governors but have not been fully implemented primarily owing to lack of the necessary resources.

6. In developing an enhanced programme to respond to the threat, the Secretariat believes that the immediate short term objective is to obtain better information about the status of the protection of States' nuclear and other radioactive materials and facilities against malicious acts. Then, with the assistance of States, the necessary recommendations will be identified, along with plans for implementation. The Agency technical co-operation programme could be used as an important vehicle for the implementation of such plans. It is also proposed that the Agency take on a more active role in encouraging Member States to adhere to international instruments relevant to the enhancement of protection against nuclear terrorism and assisting Member States in giving effect to these instruments. The Director General also intends to convene a new Advisory Group on the nuclear security area to assist the Secretariat in reaching decisions regarding the prioritization and implementation of the programme.

## SPECIFIC RESPONSE

### Theft of a nuclear weapon

7. The theft of a nuclear weapon by a subnational group may be highly unlikely but it is a possibility that cannot be excluded. It would clearly represent the most serious threat in terms of its potentially devastating consequences. Responsibility for preventing such an action lies with the States that possess nuclear weapons. It is to be hoped that these States will urgently revisit current security and organizational arrangements to ensure that all necessary measures are in place to meet possible threats. The Agency stands ready within its experience to provide and/or co-ordinate advice on matters related to safety, nuclear material oversight and physical protection.

### Acquisition of nuclear material

#### *Background*

8. As regards nuclear material, the primary threat lies in the acquisition by subnational groups of sufficient quantities of such material to construct nuclear weapons. Although it is not likely that terrorists would have the wherewithal to manufacture and successfully detonate a nuclear explosive device, the possibility again cannot be discounted. A secondary threat, which is perhaps more likely, is the deliberate exposure of individuals to, or the more general dispersal of, nuclear material, leading to harmful effects to people, property and the environment.

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[1] These include training, workshops, information exchange, the provision of experts and fellowships, and the development of guidance where appropriate. These activities will be reviewed and intensified as required.

9. Nuclear material is subject to national protection measures, though these appear to be uneven in their substance and/or application. In recent years States have confirmed to the Agency some 175 cases of illicit trafficking involving nuclear materials. While only a few of these cases involved significant amounts of nuclear material, they demonstrate that security is still inadequate at certain locations and that there is an urgent need for improved protection and control.

10. There are currently no comprehensive binding international standards for the physical protection of nuclear material. The international physical protection regime consists of the Convention on the Physical Protection of Nuclear Material and the recommendations entitled *The Physical Protection of Nuclear Material and Nuclear Facilities*. The Secretariat has been on record in recent years as repeatedly expressing its view that in a number of areas the scope of the Convention is too narrow and that a revision is required.

11. The issue of amendment of the Convention was addressed by an open-ended Expert Meeting which, among other things, concluded in its report of May 2001 that there was "a clear need to strengthen the international physical protection regime" and that a spectrum of measures should be employed — including the drafting of a well defined amendment to strengthen the Convention, to be reviewed by States Parties with a view to determining if it should be submitted to an Amendment Conference in accordance with Article 20 of the Convention. The Final Report of the Expert Meeting stated that the well defined amendment should address the following subjects: extension of the scope to cover, in addition to nuclear material in international nuclear transport, nuclear material in domestic use, storage and transport, as well as protection of nuclear material and facilities from sabotage; the importance of national responsibility for physical protection; the importance of protection of confidential information; the *Physical Protection Objectives and Fundamental Principles* endorsed by the Board of Governors; and definitions. In response to that recommendation, the Director General has convened an open-ended meeting of legal and technical experts, to take place from 3 to 7 December 2001, to draft such an amendment. The Secretariat supports the need for the amendment and urges that it be adopted as soon as practicable.

12. Recent events have also raised the question of how to address other issues that the Expert Meeting recommended should *not* be included in an amendment of the Convention: a requirement to submit reports to the international community on the implementation of physical protection; a peer review mechanism; and mandatory international oversight of physical protection measures; and nuclear material and nuclear facilities for military use. It would be helpful if the December legal and technical expert meeting could give consideration to how these issues might be best addressed, either within the Convention or outside it, in order to enhance transparency and confidence in the efficacy of the international physical protection regime, particularly in the light of recent events. International Physical Protection Advisory Service (IPPAS) missions could be utilized, for example to confirm that the necessary regulatory oversight is in place in each State. Such missions would be undertaken, as now, in a manner that would not compromise the confidentiality of detailed physical protection arrangements at individual facilities.

***Current Agency activities***

13. The Agency's current plan of activities aims at improving the security of nuclear material, including control and physical protection. Assistance is given to Member States in

the application of physical protection recommendations through evaluation and assessment services, training, expert advice, technical upgrades, follow-up missions and facilitation of bilateral support.

14. The Agency has a limited programme aimed at increasing the capabilities of Member States to detect and respond to theft, illicit trafficking, and other malicious use or threatened use of nuclear material and other radioactive materials. This includes the preparation of guidance, the maintenance of an illicit trafficking database (which is recognized as being incomplete, with only minimal Agency follow-up actions), the generation of a set of functional specifications for equipment used for radiation monitoring at borders, training and relevant technical co-operation and co-ordinated research projects. In a number of areas the activities are co-ordinated with other international organizations.

15. The Agency provides assistance to States (albeit only a limited number) in improving their systems of nuclear material accountancy and control. Current initiatives in this regard include the Co-ordinated Technical Support Programme, providing support to the Newly Independent States, as well as training courses on State Systems of Accountancy and Control (SSACs) and the development of guides on self-assessment. Good nuclear material accounting and control, as reinforced by safeguards, has the potential to assist in follow-up activities if a terrorist were to acquire nuclear material: to help determine the origin of any missing material, to help identify individuals who had access to it, and to facilitate early recovery of the material.

16. A threat assessment methodology has been developed and forms the basis for workshops to help States assess possible threats to their nuclear activities. Five such workshops have been conducted and several others are being scheduled. However, considering the need for all States now to reassess such threats, the current schedules need to be significantly augmented.

***Proposals for enhanced and additional activities***

17. It is proposed to increase the number and scope of IPPAS missions and to be more proactive in soliciting support for remedial measures identified as a result of these missions. As discussed later, it is foreseen that the Agency could play a significant role, on request, in assisting States in the follow-up to mission recommendations (e.g. facility upgrades). It is also proposed to consider the expansion of this Agency service to cover assistance to States in:

- *System effectiveness evaluation*: to evaluate the physical protection effectiveness of nuclear facilities;
- *Operational security evaluation*: to review the security of nuclear facilities during operation;
- *Transport*: to evaluate the effectiveness of the physical protection of nuclear material in transport and/or of transport systems;
- *Nuclear facility design safety assessment and engineering protection*: to evaluate nuclear facility designs to assess their robustness to withstand acts of extreme violence.

18. To carry out this new initiative, a broad roster of technical and legal experts who can be called upon to participate in the missions will be established. Related activities would include reviewing the IPPAS guidelines.

19. The 1999 revision of recommendations on *The Physical Protection of Nuclear Material and Nuclear Facilities* included for the first time a chapter specifically devoted to the consideration of physical protection against sabotage. However, specific measures were recommended only for nuclear power reactors. In view of the new threat environment and the possible need to extend the measures for protection against sabotage to other nuclear facilities, nuclear material and transport, a meeting of experts to revise the recommendations will be convened.

20. Further activities aimed at increasing the capabilities of Member States to detect and respond to the theft, illicit trafficking and other malicious use or threatened use of nuclear material are proposed:

- *Detection at borders*: to assess the needs for border monitoring equipment and to assist States in the financing, procurement and installation of such equipment. In support of this activity, guidance will be developed to define and identify appropriate equipment that can be used by States for the detection of and response to illicit trafficking at borders. Accordingly, efforts will be accelerated to improve detection technology by co-ordinating the necessary research and development activities.

- *Illicit trafficking database*: to improve the database programme to provide a more comprehensive and effective knowledge base for addressing nuclear security (including activities pertaining to nuclear related terrorism) and better mechanisms for co-operation and follow-up of information.

- *Improving State response to seized material*: to conduct exercises in Member States to test co-ordination and response to simulated but credible situations involving seized material. Country specific advice on improvements could be developed on the basis of the results.

21. It is proposed to conduct Agency evaluations of SSACs on the basis of which international co-ordinated assistance could be provided to introduce improvements.

**Acquisition of other radioactive material**

***Background***

22. The primary threat associated with other radioactive materials (such as radioactive sources and radioactive waste) lies, as with nuclear materials, in deliberately exposing individuals to radiation or the dispersion of the material, with consequent harmful effects to people, property and the environment. Although the consequences of this threat may be limited in comparison with the other threats discussed in this report, its likelihood may be somewhat greater. This is because the security of radioactive sources is lax in some States — keyed more to protection of property than to radiological risk — in part as a result of weak regulatory oversight. As a consequence, an undetermined number of sources have become "orphaned" from regulatory control, and their location is unknown.

***Current Agency activities***

23. The *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radioactive Sources* and the *Code of Conduct on the Safety and Security of Radioactive Sources*, both developed by the Agency, contain general, but no detailed, requirements on the security of radiation sources.

24. The Agency has an *Action Plan on the Safety and Security of Radiation Sources*. Its primary purpose is to enable the Agency to develop and implement activities that will assist Member States in maintaining and improving the safety and security of radiation sources. However, the Action Plan does not address the kind of malicious acts dealt with in this report.

25. The Agency also has a technical co-operation Model Project on "Upgrading radiation and waste safety infrastructures" that is being expanded to reach a larger number of countries. One of the important milestones of the project is to achieve a minimum system in participating Member States for the control of radiation sources. However, the project was not specifically designed to address malicious acts and more needs to be done in this respect.

26. In addition, the detection and response activities relating to nuclear material also apply to other radioactive materials, as appropriate.

***Proposals for enhanced and additional activities***

27. The proposals include:

- introducing a peer review service to appraise State regulatory infrastructures for the security of radioactive sources, including protection during transport;
- examining the feasibility of helping States to locate large orphan sources to bring them under regulatory control;
- reviewing the *Code of Conduct on the Safety and Security of Radioactive Sources* to make it more comprehensive in relation to security and to determine how compliance might be monitored;
- reviewing the requirements in the *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radioactive Sources* on the security of radioactive sources and updating other relevant documents;
- exploring the practicability of an international marking system for large significant radioactive sources and of establishing a norm for a more secure physical form for such sources;
- assessing the threats, and possible Agency actions, relating to malicious acts involving radioactive waste.

28. A number of the proposals discussed earlier for nuclear materials (e.g. border monitoring) are also relevant to radioactive sources.

## Nuclear facilities

### *Background*

29. The primary risks associated with nuclear facilities would involve a physical attack or act of sabotage with a view to causing a radiological hazard. The robustness of nuclear power plants and other nuclear facilities (such as fuel fabrication, enrichment, reprocessing and waste management plants, and research reactors) against acts of sabotage and other acts of extreme violence varies from country to country and from facility to facility. A spectrum of approaches have been adopted by different countries to counter the threat of physical attacks, including both security measures, and design and operational measures. Although nuclear facilities are in general very robust structures, they are not normally hardened to withstand acts of extreme violence. In this regard, some States are currently undertaking assessments. These assessments, which will be State specific, will clearly need to encompass: evaluation of threats; the type and design of each facility; defence measures; and engineering analysis.

### *Current Agency activities*

30. The Agency has provided review services to assess facility design and operational measures which provide "defence in depth" and can contribute to preventing and/or mitigating the impact of malicious acts. Existing Agency safety standards related to the safe construction and operation of nuclear facilities are currently being revised and new standards are being prepared. Guidance documents on the design of nuclear facilities other than nuclear power plants in relation to external events, covering human induced events and including possible acts of extreme violence, are in preparation.

### *Proposals for enhanced and additional activities*

31. To improve the security of nuclear installations, the Secretariat proposes to:

- expand significantly its current programme to help States to undertake facility specific assessments in connection with the protection of facilities against acts of extreme violence;
- co-ordinate the provision of assistance to implement safety related upgrades identified in the above assessments;
- in support of the above, review guidance on the safety of existing and future facilities against external and internal acts of violence;
- develop a methodology and guidelines aimed at helping States/operators assess and review the current protection of nuclear installations against acts of violence.

**Emergency response**

***Background***

32. States need to have the capability to respond to the deliberate exposure of individuals to, or dispersion of, radioactive material, be it from the detonation of a nuclear weapon, attacks on a nuclear facility or misuse of any radioactive source. In such an event, the Agency would be expected to keep the international community abreast of the situation and provide and co-ordinate assistance, as appropriate. For this purpose, the Agency maintains an Emergency Response Centre to act as an international focal point for information, co-ordination and assistance.

***Current Agency activities***

33. The Agency provides Member States with guidance on the implementation of the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency and organizes, in co-operation with other international organizations, joint emergency exercises.

***Proposals for enhanced and additional activities***

34. Additional upgrades will be made to the Emergency Response Centre in relation to information technology and telecommunications to improve the speed, efficiency, reliability and quality of the response in the event of a large radiological emergency.

35. It is proposed to make use of the Emergency Preparedness Review service, on request, for the comprehensive appraisal of national emergency response programmes in Member States. Additional training will be provided to States to increase their capability to respond effectively to the possible consequences of a radiological emergency. It is also proposed to establish and exercise international response standby teams that could be promptly dispatched to States to provide urgent assistance.

36. Consideration will also be given to:

- the possible need to develop analytical chemistry methods, techniques and capabilities for use in the event of the seizure of nuclear and other radioactive material; and a review of the specialist skills of the Secretariat in nuclear forensic studies to see how they can best be utilized in the Agency's response to an actual or potential threat;

- the possibility of establishing better links between equipment and facility manufacturers and operators in order to utilize their knowledge and expertise during an emergency situation.

**EXPECTED OUTCOMES**

37. The enhanced and additional activities proposed in this document should lead over time to outcomes which include:

- comprehensive evaluation by all States of possible threats to their nuclear facilities and nuclear material;
- international standards established for the physical protection, safety and security of nuclear and other radioactive material, and universal adherence to these standards;
- effective physical protection systems in all States;
- improved overall capabilities of nuclear facilities to withstand acts of extreme violence;
- effective SSACs in all States;
- effective control and regulatory oversight of radioactive sources in all States;
- effective border monitoring for nuclear and other radioactive material installed at key crossing points;
- effective system of international emergency response in the event of a radiological emergency caused by a malicious act.

## FINANCING

38. The nature of the proposed enhanced and additional activities will require a sustained effort over a long period of time — and resources will therefore be needed on a continuing basis. Whichever funding option is selected, it will be essential that the resources be sufficiently predictable for the Secretariat to properly plan its activities and recruit the necessary staff.

39. Although the enhanced and additional programme described in this document and the associated financial estimates provided could change significantly after further review, the total additional cost is currently estimated to be some ***$12 million per year***, over a period of several years. In addition, if the Agency were to manage the provision of equipment for physical protection upgrades at facilities and for detection equipment at border crossings this might add a minimum of a ***further $20 million per year*** over the same time period.

40. In addition to Agency emergency assistance, it should be noted that the necessary global upgrades to meet the full range of possible threats would be in the range of hundreds of millions of dollars and would have to be carried out by individual States and through bilateral and multilateral assistance. The Agency could play a role in this process in a number of ways, either as a vehicle for multilateral assistance and/or as a co-ordinator of bilateral assistance.

41. It should also be noted that over the past few years there has been an increase in the quantity of nuclear material and the number of facilities under Agency safeguards. As a result of the zero real growth policy the safeguards regular budget is significantly underfunded (to the extent of ***some $18 million per year for 2002***). Addressing such shortfalls in the safeguards budget would make a significant contribution to enhancing detection and deterring theft of nuclear material in States subject to comprehensive Agency safeguards.

## CONCLUSION

42. Terrorism is a global threat and the response to it must be global in nature. The preliminary proposals put forward in this report would require the sustained support of all States. This is because the effectiveness of anti-terrorist measures is determined by the weakest link in the chain and the implementation of these measures would benefit all States. Whilst much of the responsibility rests with States, the Agency can fulfil a very significant role in providing direct support and co-ordinating bilateral and multilateral assistance.